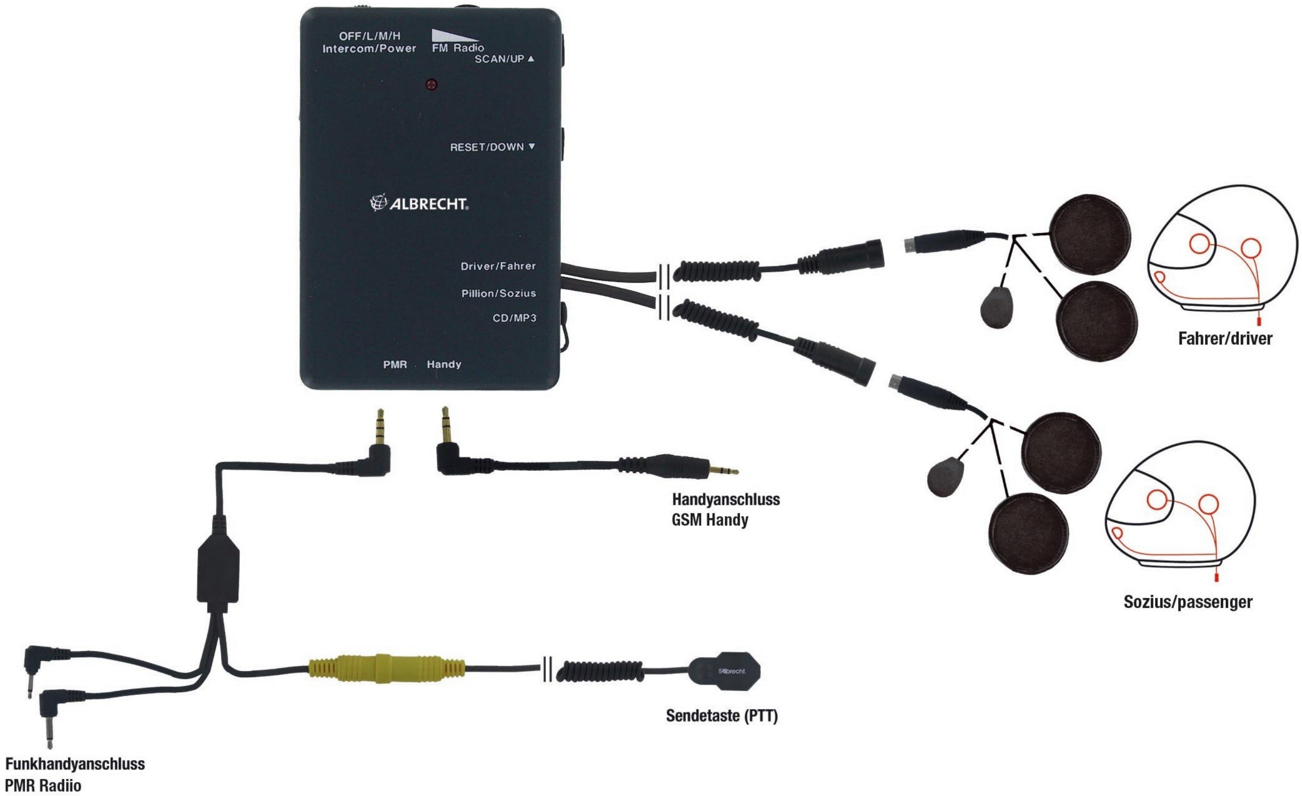
Operating manual / Hints for connection
Motorbike communication system

AE 500 S



Purpose for use

The communication system AE 500 has been designed for speech communication between motorbike driver and passenger. To achieve this you use the supplied helmet speaker sets which have to be fitted into already existing integral helmets (the set cannot be installed in jet helmets). The set gives you the opportunity for duplex communication between driver and passenger and vice versa.
The integrated Mono FM radio can be switched over to radio reception. The talking connection has priority to radio reception: while talking the radio volume will be automatically decreased.
Furthermore the following equipment can be connected:

- external MP 3 or CD/DVD player via 3.5 mm jack plug (instead of integrated radio)
- a radio with PMR 446 or LPD standard for driver and passenger in connection with supplied transmit (push-to-talk) keys
- GSM mobile phone (automatic incoming call switching mode must be active) for driver.

The set is being operated with 2 x AA size Alkaline or rechargeable NiCd/ NiMH batteries independent from vehicle power supply (not supplied with the intercom).

Declaration of Conformity:

The motorbike communication system fis in conformity with the European EMC standards, such as EN 55 013 (radio), EN 301 489-1, EN 301 489-5 (EMC for professional radios and accessories) and EN 60950 (electric safety) and it carries the CE- mark. The actual EC declaration of conformity can be downloaded from *www.hobbyradio.de*

Conditions for accessory connection

Radio connection:

The radio connection of the AE 500 fits to most of PMR with 2.5 mm / 3.5 mm plug combination such as **ALBRECHT Tectalk Pro**, **Tectalk Action**, **ALAN 443, ALAN 456R, HP 446 or Midland G7.** Radios with 2.5 mm stereo type socket like **Tectalk, Tectalk Smart, ALAN 777, ALAN K1, MIDLAND G5** can be connected with the adapter **29254.** The universal plug 2.5 mm for microphone and 3.5 mm for the ear set is being supported by many other radios. It is not intended to use the VOX-function because of the high level of surrounding noise does not allow a perfect speech switching, which is essential for simplex 2 way radio communication (different from duplex GSM use!). (On the other side, using the talk button is the only criteria to differentiate between radio and mobile phone).

MP3/Music CD/ Navigator voice announcements:

3.5 mm stereo plug. The radio is being switched off the moment the cable is being inserted.

GSM mobile phone):

universal hands-free connection via 2.5 mm stereo plug (like i. e. at Motorola phones). For many GSM telephone brands you can find suitable adapters in GSM phone accessory shops, because the 2.5mm stereo plug has been established as the quasi-standard for various hands-free kits.
The telephone has to be able to be programmed to „automatic call reception" and adjusted likewise.

Hints for installation and connection

Fitting of helmet sets:

The two helmet sets consist of two flat padded ear sets to be inserted in the helmet, a microphone to be installed inside the helmet close to your mouth and a waterproof transmit talk button which can be fixed within reach of the handle-bar or at your glove.
Supplied are two self-adhesive pads for fitting the set in the helmet and a velcro tape adjustable in length to install the talk button. These adhesive pads do have an adhesive surface on one side (remove protective foil), on the other side there is a velcro clasp so that ear set and microphone can be easily installed or removed. Bikers with only limited space to install the talk button i. e. on a metal plate at the handle bars may remove the velcro tape and stick the talk button with adhesive pads directly to the desired location.
Please fix the ear sets with still a small gap between the ears and the helmet. Your ears should not be completely covered by the ear set because then you might not be able to listen to the surrounding noise of traffic (due to Road Traffic Act you may not use headsets that **completely cover** your ears because you might overhear honking or other signals).
Please do not carry out **any changes at the helmet** before installing the headset. ECE standard for motorbike helmets does not permit to flatten the material inside the helmet i. e. to make space for the ear set. Fix the microphone inside the helmet close to your mouth with the supplied velcro tape. Before fixing the adhesive pads thoroughly clean the desired location (i.e. with alcohol, but do not use any solvent). Press tightly and remember that it takes several hours until the final strength has been achieved.
You need the talk button only in case you want to operate an additional PMR radio or another Walkie Talkie. You do not need the talk button for the basic intercom function between driver and passenger or radio/MP3. As long as only Intercom is used, the cable sets plugs for PMR radio (with talk button) and / or GSM phone do not need to be inserted. This makes basic installation very simple- just plug in the 2 headphones, and that's it!

Where to locate the central unit

The best place for location of the central unit is inside or close to the tank knap sack. The velcro tape at the central unit makes this very easy. The headset cable leading to the driver simultaneously serve as the radio antenna. Placing the central unit in the driver's pocket can only be a substitute because cables close to the human body only have a limited antenna function.

Installing the radio and/or mobile phone

Radio and mobile phone do only achieve their maximum radiation if installed detached from surroundings. If being used at the same time both should be ***as far apart as possible from each other and from the central unit.*** Temporary storage in your pockets does reduce range. ***Never place radio, mobile phone and /or central unit in the same pocket,*** undesired interferences, especially from GSM while transmission may occur.

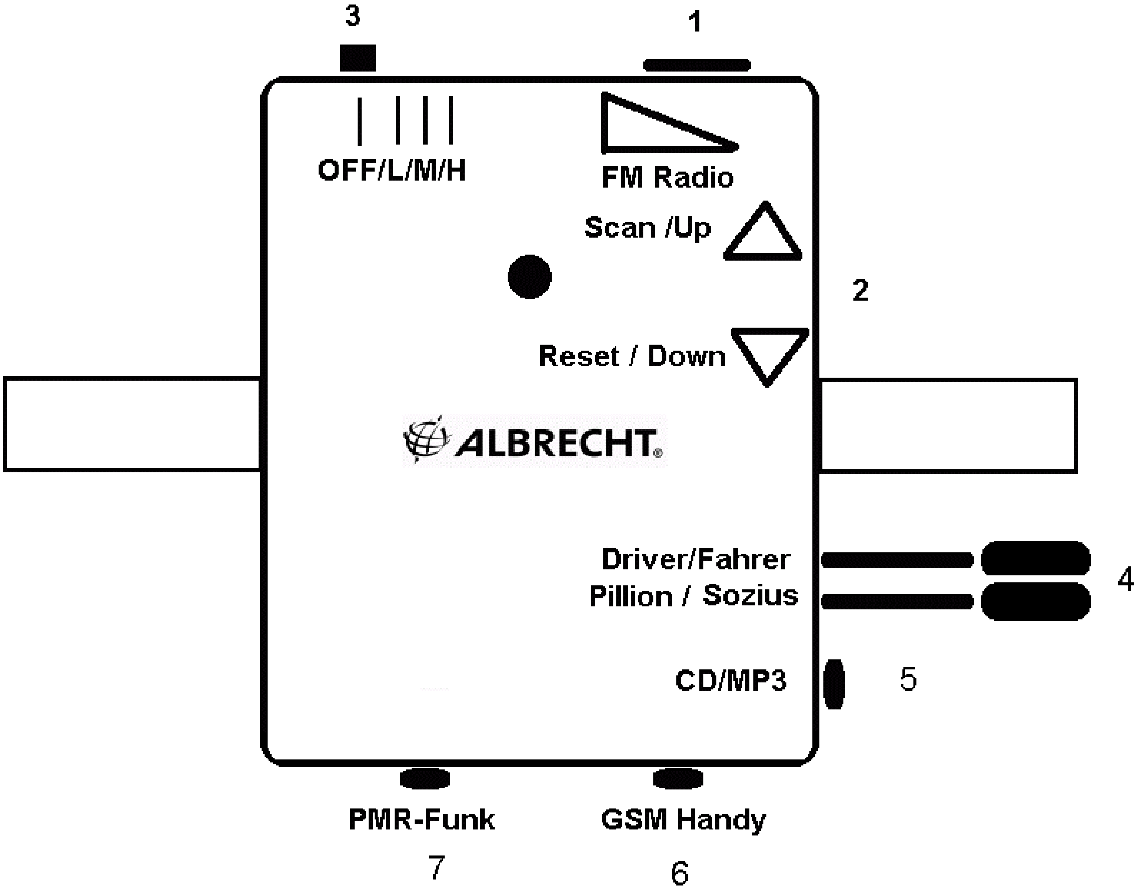
If you do not use a radio or mobile phone You simply unplug the cable sets and leave them at home!
The connections to the helmet set (black) and the talk button (yellow) are waterproof and cannot be mixed up. Connect the plugs with the markings facing each other.

Apart from a possibly connected mobile phone the speech transmissions between driver and passenger have the same priority. Mobile phone calls can only be accepted at the driver's headset. In case the passenger is supposed to use the phone instead of the driver please exchange the relevant connections before starting your trip!

Power supply / Inserting of batteries
Open the battery lid at the bottom of the central unit. Insert two batteries or rechargeable batteries size AA (Mignon). Pay attention to the correct position of the battery poles. Power consumption during operation is very low: 40 to 50 hours operating time with alkaline batteries, about 30 hours with rechargeable batteries. Please use an external charger to charge possibly used rechargeable batteries.

Warning:
Never use batteries and rechargeable batteries mixed in the battery compartment. Only use batteries **or** rechargeable batteries of the same kind, and never mix full and empty batteries. Dispose of used batteries only at the authorized collecting points at special dealers. Pay attention to the different containers for batteries and rechargeable batteries. Batteries and rechargeable batteries are special waste, they may not be disposed of with household garbage. Never throw batteries or rechargeable batteries into any fire, never short-circuit the poles of batteries or rechargeable batteries: ***Danger of fire, explosion or injury may occur!***

Operation



FM broadcast radio (1) and **intercom (3)**
can be switched on and operated separately. Please make sure that radio and intercom are both switched off if not used. The red LED light is on if unit is ready for operation.

FM broadcast radio:
Switching on/off is done with the volume setting integrated in the rotary potentiometer **(1).**
The radio has automatic frequency search function. Start automatic station search by pressing **SCAN / UP** key **(2)**. The automatic frequency search will now scan the FM radio range beginning at the lower limit close to 87.4 MHz to the upper end at 108 MHz for receiving signals and will stop at any signal which is strong enough for reception. Once having stopped

at a station, you may restart **again from this position** by pressing the **SCAN/UP** consequently. The frequency search will stop when it has once reached the upper frequency range limit.
To reset the radio for a new full frequency search, use the lower key **RESET/DOWN. This will reset the frequency to the lower limit 87.4 MHz.** Press now the **SCAN/UP** button to start frequency search again in upwards direction.

Intercom:

The intercom communication quality between driver and pillion depends on the environmental noise and the correct sensitivity adjustment. AE 500 has a 4 position slide switch **(3)**.
If you do not need the intercom (in case that you only want to listen to broadcast radio) use the left position, **Intercom (OFF).**
The intercom enables a full duplex conversation: from driver's mic to pillion's headphones and vice versa.
You may select 3 different settings:

Position L (Low):

For high speed motorbike driving. The mic sensitivity is rather low to avoid excessive noise pick-up. The setting is adjusted to normal biker's talking behaviour: You speak automatically louder if you are in a noisy, high speed environment.

Position M (Medium):

For medium speed. The mic is now more sensitive, but may react to wind and engine noise in higher speed situations.

Position H (High):

High sensitivity, for low speed and other applications. The mic reacts to normal voice volume.

Automatic FM radio muting:

A speech detection circuit with an integrated noise filter will reduce (mute) the radio, MP3 player or navigator voice announcement volume automatically, as soon as you start speaking to your partner and if the voice will be loud enough. Depending on the switch position (L, M or H) the muting starts at different speech loudness points, which ensures that the radio muting does not react to wind and engine noise. It is a good idea to make a voice training to speak as loud as the mute switch requests: this will be the optimum sound level point for the intercom.
A short moment after you stop talking, the radio or MP3 volume will automatically reach the former value again.

2-way radio conversation:

Any voice communication can also be transmitted via 2-way radios like PMR 446 or other suitable radios. PMR 446 can provide a communication range to up to 5 km under optimum conditions (radio mounted on the motor bike for free-space radiation). All you need is to plug in the 2.5 mm plug into the microphone and the 3.5 mm plug into the speaker/phone sockets of your radio and to connect the push-to-talk key supplied with the AE 500 system. Please use the same switch position (L, M or H) as for intercom. Because some commercial radio models can provide a very high loudness volume, you should initially check with lower receiving volume and increase only if necessary.
We recommend to fix the push-to-talk (PTT) switch with velcro tape at the handle bar of the motor bike. If you like to speak over the radio channel (without PTT switch only intercom is possible!), press the button and release when you want to listen again. Driver or passenger can use the PTT butten. If the PTT button is be mounted on the motor bike’s handle bar, the driver must use the PTT button also when the passenger wants to speak to a distant station (or reverse, if the passenger has the PTT button!). The MIC loudness to the radio is automatically adapted by selection of H, L, or M switch position, same as for intercom use.

2-way radio receiving:

Radio receiving has priority against broadcast or MP 3 player audio. Incoming radio communications from other stations will automatically mute the FM broadcast radio and MP 3 player. Muting is controlled by the squelch setting of the 2-way radio. After the radio channel becomes quiet again, the volume of the broadcast or MP 3 player audio will be increased again.

GSM phone at driver's headset:

Insert the 3.5 mm multiple jack of the GSM cable into the GSM phone socket (6) of the central unit and the 2.5 mm stereo plug into the handsfree socket of your mobile phone. If the plug should not fit, use an adapter, offered in all mobile phone accessory shops (the 2.5 mm stereo plug system is a quasi-standard for handsfree kits). Please program your mobile phone to automatic incoming call switching!
You will hear an incoming phone call in the headphones. Phone calls have priority against broadcast radio and MP 3 and will mute these devices. AE 500S has been designed to answer incoming calls only from driver's headset. **Please do not use the push-to-talk key PTT** (if installed) during mobile phone conversations, because this would automatically switch your microphone to the 2 way radio instead to the mobile phone!

Electronic Waste Disposal: If you should not need the Intercom any more or if it should become defective and cannot be repaired, the new European WEEE directive does not allow any more to dispose it via your household trash bin. Please dispose electronic items only at the local electronic waste collecting stations, and remove batteries before disposal.

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